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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/685,680

10/15/2003

Shih-Fu Lee

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7045

36521

7590

03/07/2005

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EXAMINER

WHITTINGTON, KENNETH

ART UNIT

PAPER NUMBER

2862

DATE MAILED: 03/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

<b>Office Action Summary</b>	<b>Application No.</b> 10/685,680	<b>Applicant(s)</b> LEE ET AL.	
	<b>Examiner</b> Kenneth J Whittington	<b>Art Unit</b> 2862	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) 14, 15, 17-21, 23 and 24 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13, 16, 22 and 25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 1-25 are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>10/15/2003</u> . | 6) <input type="checkbox"/> Other: ____.  |

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**DETAILED ACTION**

***Election/Restrictions***

Restriction to one of the following inventions is required under 35 U.S.C. 121:

5        I.     Claims 1-13, 16, 22 and 25, drawn to a method for  
             detecting missing servo patterns, classified in class  
             324, subclass 212.

          II.    Claims 14, 15, 17-21, 23 and 24 drawn to a method for  
          identifying a first servo pattern on a printed magnetic media,  
10        classified in class 360, subclass 75

          The inventions are distinct, each from the other because of  
          the following reasons:

          Inventions in Group I and Group II are related as  
          subcombinations disclosed as usable together in a single  
15        combination. The subcombinations are distinct from each other  
          if they are shown to be separately usable. In the instant case,  
          the invention in Group II has separate utility such as being  
          able to be used in devices and methods that do not require the  
          particulars of the invention in Group I. For example, Group II,  
20        finding a first servo burst, can be used in other apparatus not  
          performing defect or missing servo detection. See MPEP §  
          806.05(d). Because these inventions are distinct for the  
          reasons given above and have acquired a separate status in the

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art because of their recognized divergent subject matter,  
restriction for examination purposes as indicated is proper.

During a telephone conversation with Jesus Del Castillo  
(Reg. No. 51,604) on February 1, 2005, a provisional election  
5 was made with traverse to prosecute the invention of Group I,  
claims 1-13, 16, 22 and 25. Affirmation of this election must  
be made by Applicant in replying to this Office action.

Claims 14, 15, 17-21, 23 and 24 are withdrawn from further  
consideration by the examiner, 37 CFR 1.142(b), as being drawn  
10 to a non-elected invention.

***Information Disclosure Statement***

The information disclosure statement filed October 15, 2003  
fails to comply with 37 CFR 1.98(a)(2), which requires a legible  
15 copy of each cited foreign patent document; each non-patent  
literature publication or that portion which caused it to be  
listed; and all other information or that portion which caused  
it to be listed. It has been placed in the application file,  
but the information referred to therein has not been considered.  
20 The non-patent literature was not submitted with the IDS.

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***Requirement to Provide Information***

Applicant and the assignee of this application are required under 37 CFR 1.105 to provide information the examiner has determined is reasonably necessary to the examination of this application. The examiner requires Applicant to provide those non-patent literature items listed but not submitted in the IDS.

***Specification***

The disclosure is objected to because of the following informalities:

in paragraph 0048, line 6, "104" should be "104)"

in paragraph 0055, line 11, "know" should be "known"

Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-13, 16, 22 and 25 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. Regarding claims 1-13 and 16, the

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omitted steps are: how the map of identified servo burst patterns are "compared" to the map of anticipated bursts as recited in the claims. The disclosure contains a mention of a "comparison algorithm" in paragraph 0058, but fails to disclose  
5 the process steps necessary for a person having ordinary skill in the art to make a comparison according to the claims. Such failure to disclose the steps in the Specification carries into the claims. For purposes of examination, the comparison step will be interpreted to mean that each measured servo burst is  
10 matched to an anticipated servo burst and when there is no match, then the servo burst is deemed defective or missing.

Claims 13 and 16 are also missing an essential step, such step amounting to a gap in the elements, i.e. how the first servo burst is identified. The Specification in paragraph 0055  
15 notes that following processing of multiple samples, the computer "quickly identifies" a servo burst and from there, knows where subsequent burst are. However, there are no intermediate processing steps outlining how the computer determines which burst is the first one and which ones are  
20 subsequent. Such failure to disclose the steps in the Specification is carried into the claims. For purposes of examination, the method of finding the first servo burst as recited in the claim will be any manner known in the art.

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Claims 22 and 25 recites the limitation "the expected number of servo bursts". There is insufficient antecedent basis for this limitation in the claim or the specification. For purposes of examination, this expected number of servo burst  
5 will be interpreted to be the "anticipated" or "expected" servo bursts as recited in claim 1 and referred to in the Disclosure.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs  
10 of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior  
15 to the date of application for patent in the United States.

Claim 1, as best understood, is rejected under 35  
U.S.C. 102(b) as being anticipated by Chu et al. (US  
2002/0048112). Regarding claims 1 and 22, Chu et al. discloses  
20 a method to determine defects on a magnetic printed disk comprising:

generating a map of anticipated servo bursts (See Chu et al. paragraph 0042, note that the reference value is a function of burst values for a representative sample of sectors, such  
25 sample can be one sector, more than one sector, or different

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sectors on different tracks) (Note also that map as defined by the Disclosure in paragraph 0057 is a table or other stored values that correlate a location and signal value),

placing the disc onto a disc reading assembly (See Chu et al. FIGS. 1 and 2),

identifying servo bursts on the magnetic medium, which occur at particular polar coordinates (See Chu et al. paragraphs 0039 and 0040, it is noted that every servo burst has a specific track radius and location on track, thus, has a specific polar coordinate),

generating a map of the identified servo bursts (Chu et al. See same paragraphs, note identified bits A, B, C, D),

comparing the map of the identified servo bursts to the generated map to identify missing servo bursts (See Chu et al. paragraph 0048, note that a missing servo burst is a defect measured outside the predetermined amount delta, thus Chu et al. would find missing servo bursts).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:



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5 (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere*

10 Co., 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
- 15 2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

20 Claims 2-13, 16, 22 and 25 are rejected under 35 U.S.C.

103(a) as being unpatentable over Chu et al. in view of Richter (US 2002/0063559).

Regarding claims 2, 4-6, 8-12, 22 and 25, Chu et al.

25 teaches the features of claim 1 and the features of claim 22, and further teaches a magnetic reading head (See Chu et al. FIG. 1, item 16), passing the head over a selected track and sampling magnetic flux (See Chu et al. paragraphs 0043 to 0048) and sequentially sampling additional flux at other sectors on each track on each disk and each disk in a stack of disks (See 30 paragraphs 0037 to 0049). However, Chu et al. does not teach

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processing using a spectrum analyzer. Richter teaches a method for measuring a signal from a magnetic storage medium comprising a disk and a magnetic reading head (See Richter FIG. 1, items 12 and 11), and processing the analog signal using a spectrum  
5 analyzer. (See paragraph 0025). It would have been obvious at the time the invention was made to use such a spectrum analyzer operating in the zero span mode to process the signals measured in Chu et al. One having ordinary skill in the art would have been motivated to do so to read the tracks or sections can be  
10 read quickly without deteriorating the measurement quality (see same paragraph). Furthermore, the use of such a spectrum analyzer in the zero span mode has the property that a signal is frequency down converted, band pass filtered and rms-to-Dc converted, i.e., analog converted (See present Disclosure,  
15 paragraph 0031).

Regarding claims 3 and 7, Chu et al. teaches the signals may be processed using a digital processor, i.e., processed digitally (See Chu et al. paragraph 0033).

Regarding claims 13, it is noted that Chu et al. teaches  
20 determining a first servo burst, A, followed by servo bursts B, C and D (See Chu et al. paragraphs 0036 to 0039), and further teaches of repeating the process for each track on a disk and for each disk in a stack (See paragraphs 0037 to 0049).

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Regarding claim 16, Chu et al. teaches the signals may be processed using a digital processor (See Chu et al. paragraph 0033).

5

### **Conclusion**

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Chu et al. (US 2002/0048108), Assoud (US 6,084,739) and Rich (US 4,876,685) teach a comparison method for determining defects or missing servo bursts. Bliss (US 5,563,746) teaches defect detection in either an analog or digital mode. Hashimoto (US 2003/0206359) teaches a comparison method to determine missing or defective servos for a magnetic tape recording medium. Harvey et al. (US 6,466,895), Mankos et al. (US 2004/0129877) and Yeshurum et al. (US 6,366,085) teach method of determining defects by comparison of measured maps or patterns with reference maps or patterns.

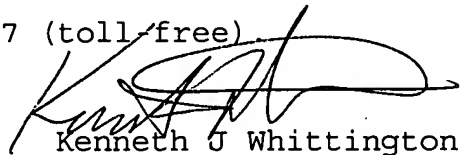
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kenneth J Whittington whose telephone number is (571) 272-2264. The examiner can normally be reached on Monday-Friday, 7:30am-4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Lefkowitz can be


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reached on (571) 272-2180. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be  
5 obtained from the Patent Application Information Retrieval  
(PAIR) system. Status information for published applications  
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Business Center (EBC) at 866-217-9197 (toll-free).

  
Kenneth J Whittington  
Examiner  
Art Unit 2862

15 kjw

  
JAY PATIDAR  
PRIMARY EXAMINER